Unit Six Appendix

The following table illustrates the relationship between the hair coat and ambient temperatures. Given a particular hair coat, cattle need to be fed above maintenance requirements if they are kept in conditions below the lower critical temperature.

Estimated lower critical temperature for maintenance-level feeding of beef cattle

Thickness of Hair coat	Lower critical temperature (°F)
summer coat or wet	60
fall coat	45
winter coat	32
heavy winter coat	19

Adapted from Brownson R, Ames D. Winter Stress in Beef Cattle. Alberta Beef Herd Management. Alberta Agriculture, Calgary, Canada

Appendix A

Feed requirements for livestock kept under various temperature ranges			
	Energy (Mcal/d) increase to be metabolized		
Deviation in °F below critical temperature	**1,000 lb. pregnant cow**	**770 lb. yearling**	**550 lb. cows gaining 1.5 lb. per day**
0	0.0	0.0	0.0
5	0.9	1.0	0.9
10	2.0	1.9	1.7
15	3.2	2.8	2.5
20	3.6	3.7	3.3
25	4.5	4.6	4.2
30	5.4	5.5	5.0
35	6.4	Above intake capacity	Above intake capacity
40	7.3	Above intake capacity	Above intake capacity

Adapted from Brownson R, Ames D. Winter Stress in Beef Cattle. Alberta Beef Herd Management. Alberta Agriculture, Calgary, Canada.

Appendix B

Recommendations for wind break requirements for livestock under winter conditions

Wind has the most serious effects on livestock performance. Cold by itself has little influence on feed performance, particularly for animals on full feed.

Wind and snow must always be considered a joint problem.

Simple shelters, sheds, and windbreak fences are essential.

Porous fences of 80 percent density offer the best wind protection for about 75 to 100 feet downwind.

Solid fences provide the best snow barrier, because 90 percent of drifting snow moves within 1 foot of the ground.

Buildings should be separated by at least 60 feet to prevent snowdrifts developing between them.

Adapted from Publication 1461. Snow and Wind Control for Farmstead and Feedlot. Agriculture Canada. Calgary, Canada, 1978.

Appendix C